



03-11-05

3744

PTO/SB/21 (09-04)

Approved for use through 07/31/2006. OMB 0551-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/006,489	
	Filing Date	December 6, 2001	
	First Named Inventor	Roger O. WILLIAMS	
	Art Unit	3744	
	Examiner Name	M. Ali	
Total Number of Pages in This Submission	50	Attorney Docket Number	514542001000

ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form + duplicate for fee processing (2 pages)	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input checked="" type="checkbox"/> Amendment/Reply (23 pages)	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Extension of Time Request (1 page)	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	1. Communication (2 pages)
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	2. Copy of Notice of Allowance and Fee(s) Due for Appn. No. 10/282,790 (14 pages)
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Landscape Table on CD	3. Copy of Office Action, Paper No. 20040728 for Appn. No. 10/282,790 (7 pages)
<input type="checkbox"/> Reply to Missing Parts/Incomplete Application	Remarks	4. Return Receipt Postcard
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	MORRISON & FOERSTER LLP (Customer No. 25226)
Signature	
Printed name	Arthur S. Hsieh
Date	March 9, 2005
Reg. No.	48,247

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV544976518US, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: March 9, 2005

Signature:

(Georgina Matos)

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005☒ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 1535.00**Complete if Known**

Application Number	10/006,489
Filing Date	December 6, 2001
First Named Inventor	Roger O. WILLIAMS
Examiner Name	M. Ali
Art Unit	3744
Attorney Docket No.	514542001000

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 03-1952 Deposit Account Name: Morrison & Foerster LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	0.00
Design	200	100	100	50	130	65	0.00
Plant	200	100	300	150	160	80	0.00
Reissue	300	150	500	250	600	300	0.00
Provisional	200	100	0	0	0	0	0.00

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
94	-73	21 x 25.00 =	525.00		180.00	0.00

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
9	-4	5 x 100.00 =	500.00

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).


Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	/50	(round up to a whole number) x		0.00

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): 2253 Extension for response within third month 510.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	48,247	Telephone	(650) 813-5705
Name (Print/Type)	Arthur S. Hsieh	Date	March 9, 2005		

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as Express Mail, Airbill No. 544976518US in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: March 9, 2005

Signature: 

Georgina Matos

PATENT
Docket No. 514542001000



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Roger O. WILLIAMS et al.

Serial No.: 10/006,489

Filing Date: December 6, 2001

For: APPARATUS AND METHOD FOR
DROPLET STEERING

Examiner: M. Ali

Group Art Unit: 3744

COMMUNICATION

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Applicants submit for consideration in the above-identified application the following documents: USPTO office action and notice of allowance in a related US application. The documents were mailed on August 3, 2004 and December 20, 2004 respectively directed to the related US Application Serial No. 10/282,790 filed on October 28, 2002 (now allowed). Copies of the documents are submitted herewith.

In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief (such as payment of a fee under 37 C.F.R. § 1.17 (p)) is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in

Serial No. 10/006,489

PATENT
Docket No. 514542001000

connection with the filing of this document to **Deposit Account No. 03-1952** referencing **514542001000**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: March 9, 2005

Respectfully submitted,

By


Arthur S. Hsieh

Registration No.: 48,247

MORRISON & FOERSTER LLP

755 Page Mill Road

Palo Alto, California 94304-1018

(650) 813-5705

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
(703) 746-4000**

or Fax

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590

12/20/2004

Johney U. Han
Morrison & Foerster LLP
775 Page Mill Road
Palo Alto, CA 94304-1018



Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/282,790	10/28/2002	Roger O. Williams	514542001020	7354

TITLE OF INVENTION: APPARATUS AND METHOD FOR DROPLET STEERING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	03/21/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
HWU, DAVIS D	3752	239-290000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Alexandria, Virginia 22313-1450
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DEC 13 2004

Morrison & Foerster, LLP
Palo Alto
7590

Johney U. Han
Morrison & Foerster LLP
775 Page Mill Road
Palo Alto, CA 94304-1018

NOTICE OF ALLOWANCE AND FEE(S) DUE



EXAMINER	
HWU, DAVIS D	
ART UNIT	PAPER NUMBER
3752	
DATE MAILED: 12/20/2004	

APPLICATION NO.	FILING DATE	
10/282,790	10/28/2002	Roger O. Williams

ATTORNEY DOCKET NO.	CONFIRMATION NO.
514542001020	7354

TITLE OF INVENTION: APPARATUS AND METHOD FOR DROPLET STEERING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	03/21/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/282,790	10/28/2002	Roger O. Williams	514542001020	7354

7590

12/20/2004

Johney U. Han
Morrison & Foerster LLP
775 Page Mill Road
Palo Alto, CA 94304-1018

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Morrison & Foerster, LLP
Palo Alto

EXAMINER

HWU, DAVIS D

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 12/20/2004



Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 219 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 219 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability

Application No.

10/282,790

Examiner

Davis D. Hwu

Applicant(s)

WILLIAMS ET AL.

Art Unit

3752

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address—

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment of November 03, 2004.
2. ☒ The allowed claim(s) is/are 1-44.
3. ☒ The drawings filed on 28 October 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 7/1/03, 11/3/04, 8/20/03, 6/26/03 & 6/11/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Davis Hwu, Primary Examiner

Form PTO-1449

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 514542001020

Application Number 10/282,790

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date August 18, 2003

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
1/	1.	07/17/2003	2003/0133842	Williams et al.			
2/	2.	03/02/1999	5,877,800	Robinson et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title

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AUG 22 2003

TECHNOLOGY CENTER R3700

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449

Docket Number 514542001020

Application Number 10/282,790

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Applicant

Roger O. WILLIAMS et al.

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date November 3, 2004

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
W	1.	02/04/1975	3,864,692	McDonnell et al.			
	2.	04/26/1988	4,740,571	Nagano et al.			
	3.	11/17/1992	5,163,620	Righi			
	4.	11/30/1993	5,266,098	Chun et al.			
	5.	04/15/1997	5,621,443	Buschulte et al.			
	6.	02/10/1998	5,716,540	Matiacio et al.			
	7.	06/02/1998	5,759,961	Zeigler et al.			
	8.	08/24/1999	5,942,387	Hollinshead			
	9.	10/24/2000	6,136,379	Scarpa et al.			
	10.	09/04/2001	6,284,113	Bjornson et al.			
	11.	10/16/2001	6,302,513	Moffat et al.			
	12.	03/26/2002	6,360,973	Stilli			
	13.	02/04/2003	6,513,736	Skeath et al.			
	14.	07/01/2003	6,586,731	Jolliffe			
	15.	10/14/2003	6,633,031	Schultz et al.			
	16.	07/20/2004	6,764,720	Pui et al.			

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NOV 09 2004

TECHNOLOGY CENTER R3700

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
W	17.	10/11/1984	JP 359179259A	Japan			Abstract

OTHER DOCUMENTS

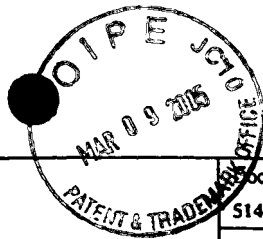
(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.



Form PTO-1449

Docket Number (docketno)
514542001020Application Number (serialno)
10/282,790INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date July 11, 2003

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
<i>g</i>	1.	04/16/1990	JP 02-103152	Japan			Abstract only (English)

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title

RECEIVED
JUL 17 2003
TECHNOLOGY CENTER R3700EXAMINER: *[Signature]*1DATE CONSIDERED: *12/8/04*

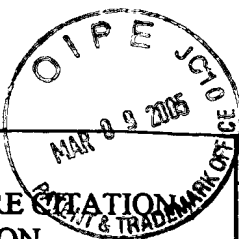
EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

JUN 26 2003 (Use several sheets if necessary)

PATENT & TRADEMARK OFFICE



Docket Number 514542001020

Application Number 10/282,790

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date June 26, 2003

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
10	1.	03/28/2002	2002/0037375	Ellson et al.			
	2.	03/28/2002	2002/0037527	Ellson et al.			
	3.	03/28/2002	2002/0037579	Ellson et al.			
	4.	04/11/2002	2002/0042077	Ellson			
	5.	05/23/2002	2002/0061258	Mutz et al.			
	6.	05/23/2002	2002/0061598	Mutz et al.			
	7.	05/30/2002	2002/0064808	Mutz et al.			
	8.	05/30/2002	2002/0064809	Mutz et al.			
	9.	07/04/2002	2002/0085063	Mutz et al.			
	10.	07/04/2002	2002/0086319	Ellson et al.			
	11.	07/11/2002	2002/0090720	Mutz et al.			
	12.	10/03/2002	2002/0142286	Mutz et al.			
	13.	10/24/2002	2002/0155231	Ellson et al.			
	14.	09/09/1975	3,903,990	Tannaka			
	15.	09/30/1980	4,225,951	Menin et al.			
	16.	12/29/1981	4,308,547	Lovelady et al.			
	17.	05/24/1983	4,385,255	Yamaguchi et al.			
	18.	08/12/1986	4,605,009	Pourcelot et al.			
	19.	09/29/1987	4,697,195	Quate et al.			
	20.	01/12/1988	4,719,476	Elrod et al.			
	21.	01/12/1988	4,719,480	Elrod et al.			
	22.	05/17/1988	4,745,419	Quate et al.			
	23.	05/31/1988	4,748,461	Elrod			
	24.	06/07/1988	4,749,900	Hadimioglu et al.			
	25.	06/14/1988	4,751,529	Elrod et al.			
	26.	06/14/1988	4,751,534	Elrod et al.			
	27.	11/01/1988	4,782,350	Smith et al.			

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Form PTO-1449

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 514542001020

Application Number 10/282,790

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date June 26, 2003

28.	01/10/1989	4,797,693	Quate			
29.	01/31/1989	4,801,950	Frehling			
30.	01/31/1989	4,801,953	Quate			
31.	09/19/1989	4,867,517	Rawson			
32.	09/25/1990	4,959,674	Khri-Yakub et al.			
33.	07/02/1991	5,028,937	Khri-Yakub et al.			
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35.	12/03/1991	5,070,488	Fukushima et al.			
36.	12/24/1991	5,074,649	Hamanaka			
37.	02/11/1992	5,087,931	Rawson			
38.	05/05/1992	5,111,220	Hadimioglu et al.			
39.	05/26/1992	5,115,809	Saitoh et al.			
40.	06/09/1992	5,121,141	Hadimoglu et al.			
41.	06/16/1992	5,122,818	Elrod et al.			
42.	08/25/1992	5,142,307	Elrod et al.			
43.	11/17/1992	5,163,436	Saitoh et al.			
44.	01/05/1993	5,176,140	Kami et al.			
45.	03/02/1993	5,191,354	Quate			
46.	03/16/1993	5,194,880	Elrod et al.			
47.	06/01/1993	5,216,451	Rawson et al.			
48.	07/20/1993	5,229,793	Hadimioglu et al.			
49.	07/27/1993	5,231,426	Sweet			
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52.	02/15/1994	5,287,126	Quate			
53.	04/05/1994	5,299,578	Rotteveel et al.			
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57.	06/27/1995	5,428,381	Hadimioglu et al.			
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59.	04/02/1996	5,504,564	Snelling et al.			
60.	05/28/1996	5,520,715	Oeftering			
61.	07/30/1996	5,541,627	Quate			
62.	10/15/1996	5,565,113	Hadimioglu et al.			
63.	12/31/1996	5,589,864	Hadimioglu			
64.	01/07/1997	5,591,490	Quate			
65.	03/04/1997	5,608,433	Quate			
66.	03/18/1997	5,612,723	Shimura et al.			
67.	05/13/1997	5,629,724	Elrod et al.			
68.	05/20/1997	5,631,678	Hadimioglu et al.			
69.	09/23/1997	5,669,389	Rotteveel et al.			
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85.	03/21/2000	6,038,752	Finsterwald et al.			
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88.	10/24/2000	6,136,210	Biegelsen et al.			

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INFORMATION DISCLOSURE CITATION
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Docket Number 514542001020

Application Number 10/282,790

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date June 26, 2003

89.	11/07/2000	6,142,618	Smith et al.			
90.	11/28/2000	6,154,236	Roy et al.			
91.	02/13/2001	6,187,211	Smith et al.			
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94.	11/06/2001	6,312,121	Smith et al.			
95.	01/08/2002	6,336,696	Ellson et al.			
96.	04/09/2002	6,368,482	Oeftering et al.			

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	97.	06/30/1993	EP 0 549 244	Europe			
	98.	06/03/1998	EP 0 845 357	Europe			
	99.	03/28/2002	WO 02/24323	WIPO			
	100.	03/28/2002	WO 02/24324	WIPO			
	101.	04/04/2002	WO 02/26394	WIPO			
	102.	04/04/2002	WO 02/26756	WIPO			
	103.	06/06/2002	WO 02/44319	WIPO			
	104.	06/13/2002	WO 02/47075	WIPO			
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	107.	Lemieux, B. et al. (1998). "Overview of DNA Chip Technology," <i>Molecular Breeding</i> 4:277-289.
	108.	Lemmo, A.V. et al. (February 1997). "Characterization of an Inkjet Chemical Microdispenser for Combinatorial Library Synthesis," <i>Analytical Chemistry</i> 69(4):543-551.

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE CARD
IN AN APPLICATION

(Use several sheets if necessary)

JUN 26 2003

Docket Number 514542001020

Application Number 10/282,790

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Filing Date October 28, 2002

Group Art Unit 3752

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109. NASA, Lewis Research Center, (October 2001). "Technology Opportunity: Acoustic Micro-Dispensing," *Combustion & Fluids TOP3-00130*. Located at [http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches\(111;20221218;1\)](http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches(111;20221218;1)) Last visited on 9/4/2002. (2 pages).
110. NASA, Glenn Research Center, "Acoustic Liquid Manipulation Improves Selective Plating Process," *Nasa Glenn Success Stories*, located at [http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches\(22;20221218;1\)](http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches(22;20221218;1)) Last visited on June 16, 2003. (1 page).
111. NASA, Glenn Research Center, "Acoustically Enhanced Electroplating Process," *Nasa Glenn Success Stories*, located at [http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches\(22;20221218;1\)](http://technology.nasa.gov/scripts/nls_ax.dll/twDispMatches(22;20221218;1)) Last visited on June 16, 2003. (1 page).
112. NASA, Lewis Research Center, (August 1998). "Technology Opportunity: The Directional Electrostatic Accretion Process," *Materials & Structures MS-200-1*, located at [http://technology.nasa.gov/scripts/nls_ax.dll/twdispMatches\(111;20221218;1\)](http://technology.nasa.gov/scripts/nls_ax.dll/twdispMatches(111;20221218;1)) Last visited on June 16, 2003. (2 pages).
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EXAMINER:

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Form PTO-1449

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 514542001020

Application Number 10/282,790

Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date June 11, 2003

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
1/	1.	03/28/2002	2002/0037359	Mutz et al.			
1/	2.	07/18/2002	2002/0094582	Williams et al.			
1/	3.	01/15/1985	4,493,795	Nestor, Jr. et al.			
1/	4.	06/14/1988	4,751,530	Elrod et al.			
1/	5.	08/25/1998	5,798,774	Okada et al.			
1/	6.	10/27/1998	5,828,388	Cleary et al.			
1/	7.	09/12/2000	6,116,718	Peeters et al.			

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JUN 17 2003

TECHNOLOGY CENTER R3700

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
1/	8.	06/18/1976	FR 2 291 800	France			Abstract only (English)
1/	9.	03/04/1993	DE 41 28 590	Germany			Abstract only (English)
1/	10.	03/28/2002	WO 02/24325	WIPO			

OTHER DOCUMENTS

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Examiner Initials	Ref. No.	Title
1/	11.	Avrameas, S. et al. (1978). "Coupling of Enzymes to Antibodies and Antigens," <i>Scandinavia Journal of Immunology</i> 8(supp7):7-23.
1/	12.	DeLuca, D. (1982). "Immunofluorescence Analysis" Chapter 7 In <u>Antibody As A Tool</u> Marchalonis, J.J. and Warr, G.W. eds., John Wiley & Sons pp. 189-231.
1/	13.	Galfre, G. and Milstein, C. (1981). "Preparation of Monoclonal Antibodies: Strategies and Procedures" Chapter 1 In <u>Methods in Enzymology</u> Academic Press, Inc., Volume 73 pp. 3-46.

EXAMINER: (examiner)

DATE CONSIDERED:

12/13/04

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449

Docket Number 514542001020

Application Number 10/282,790

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

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Applicant

Roger O. WILLIAMS, et al

Filing Date October 28, 2002

Group Art Unit 3752

Mailing Date June 11, 2003

JUN 11 2003

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|-----|--|
| 14. | Mandenius, C.F. et al. (1986). "Reversible and Specific Interaction of Dehydrogenases with a Coenzyme-Coated Surface Continuously Monitored with a Reflectometer," <i>Analytical Biochemistry</i> 157:283-288. |
| 15. | Rodwell, J.D. and McKearn, T.J. (1985). "Linker Technology: Antibody-Mediated Delivery Systems," <i>Biotechnology</i> 3:889-894. |
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DATE CONSIDERED:

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pa- 796922

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Notice of References Cited

Application/Control No.

10/282,790

Applicant(s)/Patent Under
Reexamination
WILLIAMS ET AL.

Examiner

Davis Hwu

Art Unit

3752

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,560,543	10-1996	Smith et al.	239/102.2
	B	US-6,312,121	11-2001	Smith et al.	347/96
	C	US-5,518,179	05-1996	Humberstone et al.	239/102.2
	D	US-6,596,239	07-2003	Williams et al.	422/100
	E	US-5,686,945	11-1997	Quate et al.	347/46
	F	US-6,007,183	12-1999	Horine, David A.	347/46
	G	US-5,631,678	05-1997	Hadimioglu et al.	347/46
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/282,790	10/28/2002	Roger O. Williams	514542001020	7354

7590 08/03/2004

Johney U. Han
Morrison & Foerster LLP
775 Page Mill Road
Palo Alto, CA 94304-1018

EXAMINER

HWU, DAVIS D

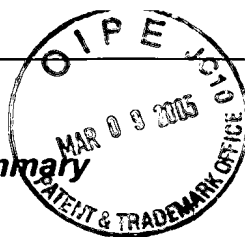
ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 08/03/2004



Please find below and/or attached an Office communication concerning this application or proceeding.



AUG 0 8 2004

Office Action Summary

Application No.

10/282,790

Applicant(s)

WILLIAMS ET AL

Examiner

Davis Hwu

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-25 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10 and 13 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 11, 12 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 7, 9, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (US Patent 6,312,121)

The patent to Smith et al. '121 shows a system for altering a trajectory of a droplet comprising:

- a throated structure having a nozzle 82 defined therethrough with an entrance port at a proximal end of the nozzle and an exit port at a distal end of the nozzle, wherein the throated structure further defines at least one channel in fluid communication with the nozzle for receiving a flow of fluid such that the

Art Unit: 3752

- trajectory of a droplet entering the entrance port is alterable by the flow of fluid to a predetermined path as the droplet passes through the exit port;
- a droplet generator 75 for forming the droplets, the droplets generator being disposed proximally of the throated structure;
 - a coupling medium adapted to be disposed on a distal portion of the droplet generator, wherein the coupling medium is further adapted to at least partially conform to a bottom of a wellplate 74 while transmitting acoustic energy generated by the droplet generator into the wellplate (Column 11, lines 1-5);
 - a pump 83 in fluid communication with the throated structure as recited in claim 13.

Regarding claims 2 and 3, since the device of Smith et al. is a printing apparatus, there would be a target medium disposed as recited in the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '121.

The target medium comprising a glass slide would have been a matter of intended use since it has been held that a recitation with respect to the manner in which a claimed

apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '121 in view of Smith et al. (US Patent 5,560,543).

Smith et al. '543 teaches a droplet generator comprising a heat exchanger to maintain the fluid in a heated state for high temperature applications. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Smith et al. '121 by incorporating a heat exchanger as taught by Smith et al. '543 for high temperature operations.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. '121 in view of Humberstone et al.

Humberstone et al. teaches a droplet generator comprising a capillary tube inserted into a reservoir of liquid from which the droplet is ejected. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Smith et al. by providing a capillary tube inserted into a reservoir to transport liquid from the reservoir to the droplet generator as taught by Humberstone et al.

Allowable Subject Matter

8. Claims 5, 6, 11, 12, and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 18-25 are allowed.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Williams et al., Hadimioglu et al., Horine, and Quate et al. are pertinent to Applicant's invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis Hwu whose telephone number is 703-305-1663. The examiner can normally be reached on M-F 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Y. Mar can be reached on (703)308-2087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Davis Hwu